

# Construction Contracts: Annual Update

## Contract Award Amount to Engineer's Estimate

### 118 Construction Contracts Awarded

WSDOT awarded 118 highway construction contracts between July 1, 2005 and June 30, 2006 (FY 2006). For every contract awarded, WSDOT tracks the difference between the contract award amounts and the engineer's estimate. The total award amount of all contracts for FY 2006 totaled \$361,514,031, which was 4.5% percent above the total engineer's estimates of \$345,802,088.

The scatter plot to the right shows the award value for each contract and the total percent above or below the engineer's estimate. Fifty-four contracts (46%) were awarded below the engineer's estimate. The additional 64 construction contracts were over the engineer's estimate.

WSDOT reviews all bids received. When a low bid exceeds the engineer's estimate by more than 10%, a formal justification is required prior to award. WSDOT will then examine the reasons bids were higher than anticipated and if re-advertisement would lead to a lower cost. Unless there are changes to the project WSDOT could make to lower the cost or increase the likelihood of additional competition in the bidding pool, re-advertisement is usually not a cost effective alternative.

Selected contracts circled in the scatter plot to the right had a significantly higher cost over-run. These include:

#### SR 543, I-5 to International Boundary

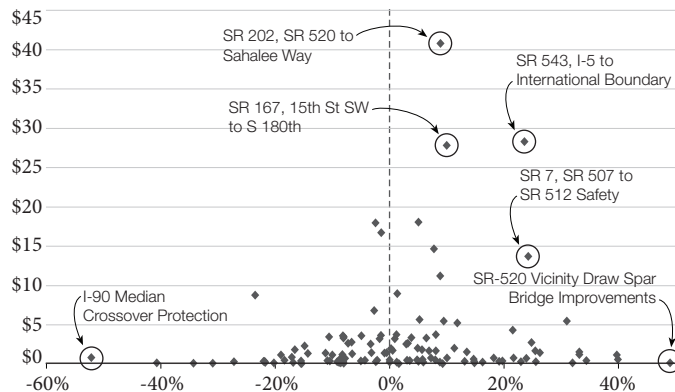
The contract award totaled \$28.3 million, 24% over the engineer's estimate as a result of oil and concrete price escalation. WSDOT received only two bids for this project, partially due to its remote location.

#### SR 7, SR 507 to SR 512 Safety improvements

The contract totaled \$13.7 million, 24% over the engineer's estimate. The increase was partially due to the rapid increase in fuel prices.

### Individual Contracts: Award Amount to Engineer's Estimate

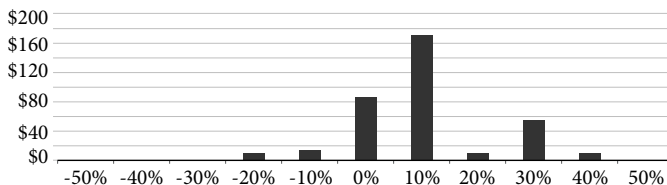
Percent Award Above or Below Engineer's Estimate, Dollars in Millions



Source: WSDOT Construction Office

### Distribution of Contract Value Over/Under Award Amount to Engineer's Estimate

Percent Award Above or Below Engineer's Estimate, Dollars in Millions



Source: WSDOT Construction Office

The histogram above shows the distribution of contract award values that were above or below WSDOT's estimate. For example, approximately \$171 million in contracts were awarded between 0-10% above the estimate.

### WSDOT Revisits its Estimating Practices

WSDOT aggressively monitors project costs to funnel this information back into current estimates. WSDOT obtained new software to allow engineers access to more recent bid histories. This will better align the estimates to current market conditions.

### Highway Construction Contracts Awarded: Year-to Year Comparison<sup>1</sup>

	FY2002	FY2003	FY2004	FY2005	FY2006
Number of contracts awarded	177	176	129	141	118
Total award amount for highway contracts	\$250,561,516	\$314,534,831	\$389,592,349	\$500,099,488	\$361,514,031
Total engineer's estimate for contracts	\$277,091,361	\$355,420,644	\$398,923,582	\$511,364,300	\$345,802,088
Average % total awards were above/below the estimate	-7.5%	-6.5%	-1.4%	1.3%	1.9%
% total award is above/below the engineer's estimate	-9.5%	-11.5%	-2.3%	-2.2%	4.5%
Combined contract value awarded below the estimate	71.7%	84.0%	53.3%	74.4%	30.5%
Number of contracts awarded below the estimate	129	123	85	77	54
% of contracts awarded below the estimate	72.9%	69.9%	65.9%	54.6%	45.8%

Source: WSDOT's Construction Office

<sup>1</sup>Does not include the Tacoma Narrows Bridge and the Hood Canal Bridge, Bridge Design Build Projects, or emergency contracts.

# Construction Contracts: Annual Update

## Contract Final Costs to Award Amount

WSDOT continually evaluates the balance of contract risks to both the owner (WSDOT) and the contractor. WSDOT allocates risk to the party in the best position to optimize the outcome. WSDOT further works with the contractor to help them manage the risk. For instance, WSDOT can make partial payments to contractors for materials before they are permanently incorporated in the project. Contractors can then better manage material cost escalation risks by locking in prices after the contract is awarded. WSDOT also uses the Cost Reduction Incentive Proposal process, which allows the contractor to suggest an alternate design. When an alternative design is suggested, the contractor takes on more risk in the constructability and design, but shares in the cost savings.

### 114 Construction Contracts Completed

WSDOT completed 114 highway construction contracts in FY 2006. For every completed contract, WSDOT tracks final construction costs compared to the original engineers estimate and the award amount. WSDOT's goal is for the final construction costs to be less than 10% above the award amount.

#### Final Costs to Award Amount

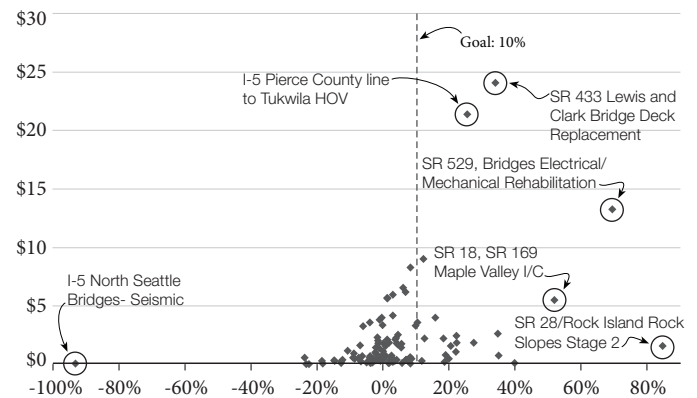
The total final cost of contracts completed in FY 2006 was \$225,

445,739. This exceeds the total award amount of \$201,782,248 by 11.7%.

The scatter plot below shows the final cost of each contract and the percent above or below the award amount. The final cost for 92 contracts (81%) was less than 10% above the award. Twenty-two completed contracts were 10% above the award amount. On average, the final contract costs were 3.4% above the original award amount.

#### Individual Contracts: Final Costs to Award Amount

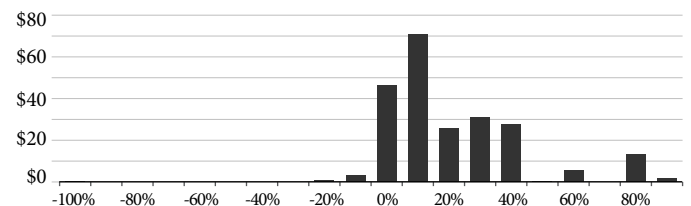
Percent Final Cost Above or Below Award, Dollars in Millions



Source: WSDOT Construction Office

#### Distribution of Contract Value Over/Under Final Costs to Award Amount

Percent Final Cost Above or Below Award Amount, Dollars in Millions



Source: WSDOT Construction Office

The histogram above shows the distribution of final costs above or below the contract award. For example, about \$71 million worth of contracts had a final cost between 0-10% above the original contract award amount. Just over half (55%) of the total contract value awarded had final costs at least 10% above the award amount.

Selected contracts circled in the scatter plot to the right exceeded the 10% threshold and include:

#### SR 433, Lewis and Clark Bridge Deck Replacement:

\$6.1 million (34%) cost over-run occurred to cover required structural changes that will increase the service life by reducing vibrations that were not evident in the modeling conducted during the design phase.

#### SR 529, Bridges 529/20 E&W and 529/25 Electrical/ Mechanical Rehabilitation

\$5.4 million (70%) cost over-run occurred due to needed traffic control modifications to minimize traffic disruption and payment to accelerate the work.

#### I-5, Pierce County Line to Tukwila HOV

A \$4.3 million (26%) cost over-run occurred to pay for changes related to the building of a wall.

#### Completed Contract: Final Costs to Award Amount

	FY2002	FY2003	FY2004	FY2005	FY2006
Number of highway contracts completed	122	175	147	155	114
Total final cost for highway contracts	\$213,953,965	\$375,244,919	\$294,482,387	\$294,988,223	\$225,445,739
Total award amount for highway contracts	\$196,000,000	\$351,525,709	\$274,495,656	\$280,396,785	\$201,782,248
Average % final costs exceeded award	1.8%	3.8%	2.9%	3.9%	3.4%
% final cost exceeded award amount	9.2%	6.7%	7.3%	5.2%	11.7%
% of contract values less than 10% above award	66.0%	65.3%	45.1%	76.3%	55.1%
Number of contracts less than 10% above award	98	137	115	121	92
% of contracts less than 10% above the award	80.3%	78.3%	78.2%	78.1%	80.7%

Source: WSDOT Construction Office

# Construction Contracts: Annual Update

## Contract Final Costs to Engineers Estimate

### Final Costs Exceed Estimate by 1%

The final contract costs in FY 2006 totaled \$225,445,739. This exceeds the total engineer estimate of \$223,751,551 by 1%.

The scatter plot to the right shows the final cost of each contract and the percent it was above or below the engineer's estimate.

Selected contracts circled in the scatter plot to the right, had a significantly higher cost over-run. These include:

#### **SR433, Lewis and Clark Bridge Deck Replacement**

This contract had six bidders and was awarded for \$17.9 million, 37% under the engineer's estimate; it over-ran the award amount by 34%. The project still was under the estimate by 16%.

#### **I-5, Pierce County Line to Tukwila HOV and Truck Climbing lane**

The contract award of \$17 million was 8% below the engineer's estimate. It over-ran the award amount by 26% and was above the estimate by 16%.

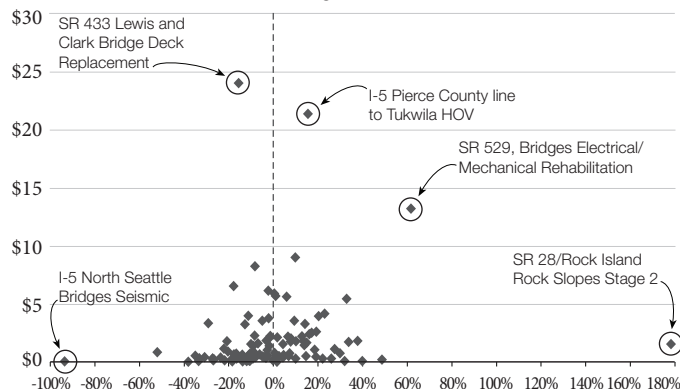
#### **SR 529, Bridges 529/20 East & West and 529/25 Electrical/Mechanical Rehabilitation**

The contract award of \$7.8 million was 5% below the engineer's estimate. Contract cost over-ran the award amount by 70% and the estimate by 62%.

The total engineer estimate for these three projects was \$55.1 million and the total award amount was \$42.8 million. The final cost was about \$58.7 million (7%) over the award amount.

### Individual Contracts: Final Costs to Engineer's Estimate

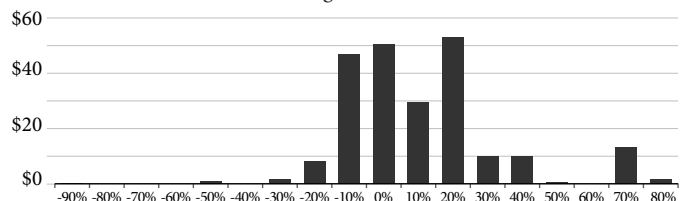
Percent Final Cost Above or Below Engineer's Estimate, Dollars in Millions



Source: WSDOT Construction Office

### Distribution of Contract Value Over/Under Final Costs to Engineer's Estimate

Percent Final Cost Above or Below Engineer's Estimate, Dollars in Millions



Source: WSDOT Construction Office

The histogram above shows the distribution of final costs that were above or below the estimate. For example, approximately \$53 million in contracts had a final cost between 10-20% above the estimate. Around two-thirds (64.9%) of contract final costs were below the 10% estimate.

## Completed Contracts: Final Cost to Engineer's Estimate

	FY2002	FY2003	FY2004	FY2005	FY2006
Total of construction contract estimates completed	\$215,000,000	\$393,078,777	\$277,017,902	\$294,440,780	\$223,751,551
Total final cost for construction contracts <sup>1</sup>	\$213,953,975	\$375,244,919	\$294,482,387	\$294,988,223	\$225,445,739
% total contract values cost above/below estimate	-4.7%	-5.6%	-2.6%	0.7%	0.8%
% of contract less than 10% above award	75.7%	87.1%	42.8%	74.2%	64.9%
Number of contracts less than 10% above estimate	99	151	111	118	86
% of contracts less than 10% above the estimate	81.1%	86.3%	75.5%	76.1%	75.4%

Source: WSDOT's Construction Office

<sup>1</sup>Without Sales Tax